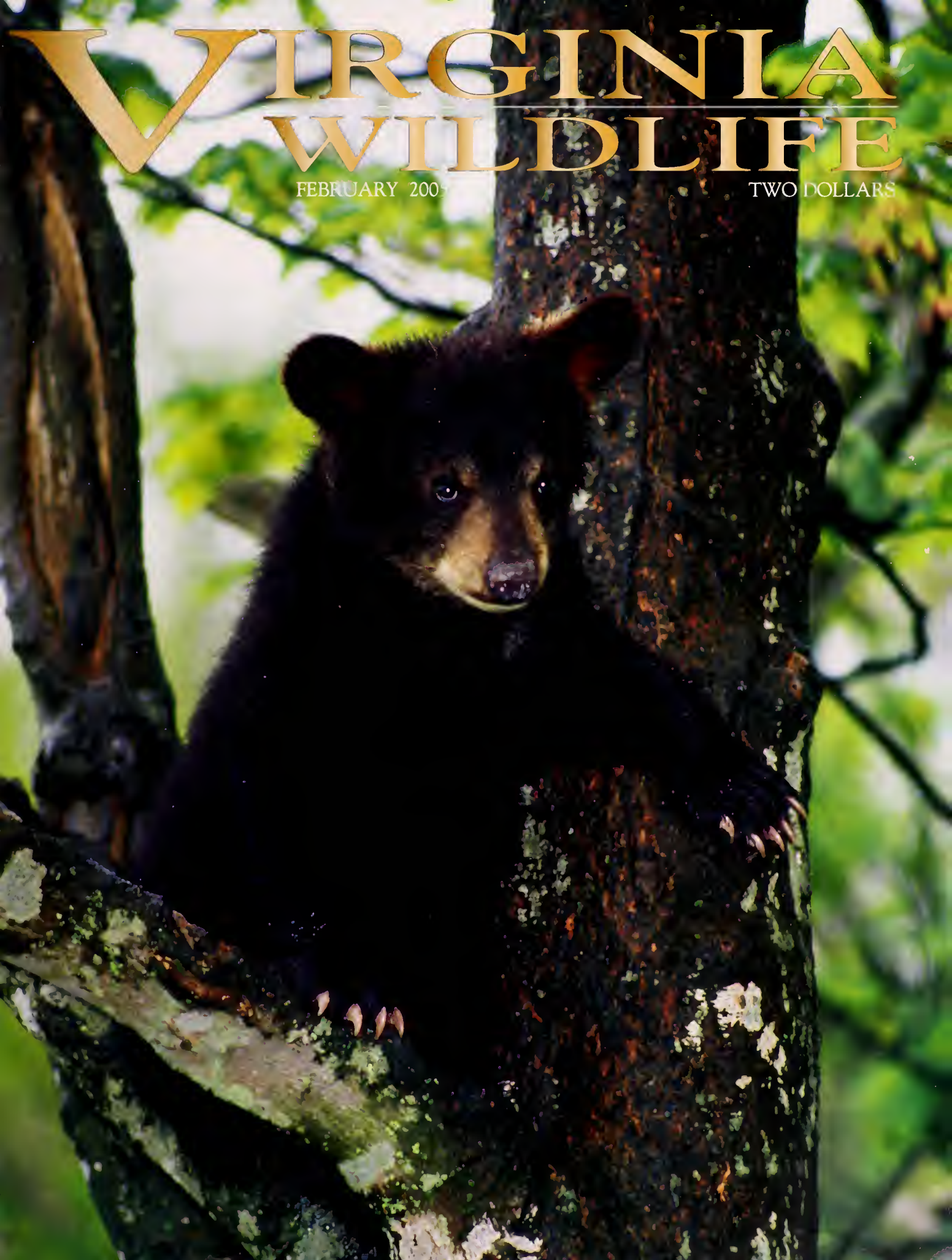
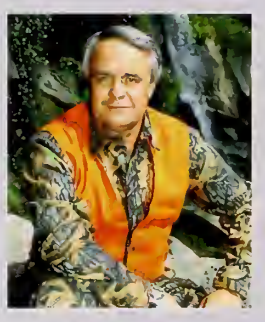

VIRGINIA
WILDLIFE
FEBRUARY 200
TWO DOLLARS

Director's Column

William L. Woodfin, Jr



The month of February is often a time when we look back at our past outdoor adventures and begin to plan for future ones. We begin to sort through our spring turkey hunting gear and putting fresh line on our fishing rods. Looking over maps in search of new travel locations that will produce the next state record fish or add a new species of bird to your life list. No matter what your plans may be, I would like to take a moment and remind you that the Department of Game and Inland Fisheries is continuing to work hard at conserving and protecting your wildlife and natural resources, and we look forward to bringing you additional opportunities for enjoying the great outdoors. No matter what time of year it is, you can find numerous activities like hunting, fishing, boating and wildlife watching somewhere in the Old Dominion.

But before you head off to catch that first fish of the year, don't forget to pick up your new 2005 Fishing License. This is also a good time to consider the purchase of a Lifetime Fishing License for yourself, a family member or a friend. It's a great way to have a lifetime of enjoyment and leave an endowment for future generations.

I'm often reminded of how fortunate we are to have so many people willing to volunteer their time, year-round, to help the Department with programs like Hunter Education and Boating Education. Whether it's teaching others how to enjoy the outdoors safely or helping to build fish structures, people who find the time to volunteer their expertise make it possible for us to accomplish the goals that we set for ourselves each year.

One extraordinary example of volunteerism that I would like to share with you concerns two individuals, Durwin Carter and his daughter Casey, of Sterling, Virginia. Last summer, while on routine patrol of a Department boat landing on the Potomac River in Loudoun County, Game Warden Bruce Lemmert "caught" Mr. Carter and his daughter in an unexpected act of picking up trash that had been carelessly disposed of by other people. When approached and asked what they were doing, Mr. Carter replied that he and his daughter were cleaning up the area. When asked why they had taken it upon themselves to do that, Mr. Carter said, "Because it needed to be done."

Durwin Carter and his daughter Casey didn't need an invitation or a special cleanup day to volunteer their time to help. They weren't looking for any recognition. But Game Warden Lemmert was so impressed by their actions that he made the recommendation that they both be recognized by the Loudoun County Chapter of the Izaak Walton League of America for their Outdoor Ethics Award. The Carters proudly accepted the award during the Izaak Walton League's banquet last fall.

Like many of you, I see the beginning of each year as a chance to make a few New Year's resolutions. Maybe this is the year you will decide to do something extra special that will make a positive impact on someone's life or on our environment. Maybe this is the year that you become a mentor to a youngster. Whatever you decide to do, I encourage you to get involved in passing on the hunting and fishing traditions that have been handed down to us so future generations can experience our beautiful natural resources.

Thank you again for your continued support. Have a safe and enjoyable year as you experience the wealth of outdoor opportunities here in Virginia.

Last year, at the Loudoun County Chapter of the Izaak Walton League of America's annual banquet, Game Warden Bruce Lemmert (left) presented an Outdoor Ethics Award to Casey Carter (center) and her father, Durwin Carter (right), for their "extraordinary example of volunteerism."

Mission Statement

To manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth; to provide opportunity for all to enjoy wildlife, inland fish, boating and related outdoor recreation; to promote safety for persons and property in connection with boating, hunting and fishing.

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Color separations and printing by Nittany Valley Offset, State College, PA.

Virginia Wildlife (ISSN 0042 6792) is published monthly by the Virginia Department of Game and Inland Fisheries. Send all subscription orders and address changes to *Virginia Wildlife*, P. O. Box 7477, Red Oak, Iowa 51591-0477. Address all other communications concerning this publication to *Virginia Wildlife*, P. O. Box 11104, 4010 West Broad Street, Richmond, Virginia 23230-1104. Subscription rates are $12.95 for one year, $23.95 for two years; $2.00 per each back issue, subject to availability. Out-of-country rate is $24.95 for one year and must be paid in U.S. funds. No refunds for amounts less than $5.00. **To subscribe, call toll-free (800) 710-9369.** Postmaster: Please send all address changes to *Virginia Wildlife*, P.O. Box 7477, Red Oak, Iowa 51591-0477. Postage for periodicals paid at Richmond, Virginia and additional entry offices.

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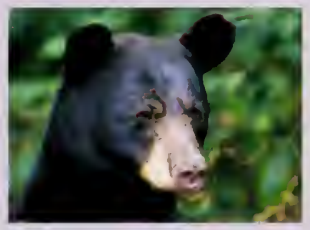
About the cover: Black bears are found throughout much of the Commonwealth, from the Dismal Swamp to the Blue Ridge Mountains. Adult female black bears weigh between 90 to 175 pounds. Males weigh between 130 to 400 pounds. As Virginia becomes more urbanized encounters between bears and people will continue to increase. ©Bill Lea



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Hidden Walker of the Woods

Virginia's black bear—saga of a survivor.

by William H. Funk

Large predators survive in modern America by remaining unseen. Hiking in Shenandoah National Park or driving the dirt roads of the southeastern Piedmont can sometimes reveal the hidden presence of something big, brawny and wild—claw marks scouring a pine tree, fresh scat steaming beside a cornfield, or thick tufts of black hair caught in the briers of a plundered blackberry bush. The traveler who sees these signs experiences sensations grown novel in our highly developed landscape; we stop short, look about carefully, hold our breath and listen for what's out there.

The American black bear *(Ursus americanus)* is a necessarily mysterious resident of Virginia, surviving along the peripheries of our industrialized world. With the state's bear population concentrated on public lands bounding the Shenandoah Valley and around the Great Dismal Swamp, our black bears seek to go about their life cycles as their ancestors have for 4.5 million years. While much of the Commonwealth's land is no longer habitable to bears, having been reduced to strip malls, suburbs and freeways, we remain blessed with a healthy population that—somewhat astonishingly—seems to be slowly increasing. Unlike their distant relative the grizzly bear, black bears have shown a high degree of adaptability in the presence of burgeoning human development, and it is their capacity to make the most of a changing landscape—to roll, as it were, with the punches of modern civilization—that has lately proven to be the species' most valuable evolutionary trait.

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Opposite page: This magnificent black bear was photographed by a subscriber of *Virginia Wildlife* last spring. He would reveal only that the picture was taken somewhere in western Virginia. Above: This track was made by a black bear and is from the right front paw. Below: Scat from a black bear is easily identified by its large size and shape.

"Black bears are amazingly adept at configuring their lives to the demands we place upon them," says Dr. Michael Pelton, a retired professor of wildlife science, sometime consultant and one of the world's foremost scientific authorities on the genus Ursus. "They have managed to survive and even expand their numbers in Virginia due to the increasing nut and acorn yield of our maturing forests, and to the permanent havens available to them in public parks, forests and wildlife refuges."

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As our largest remaining mammal, Virginia's black bear is a "keystone species"—healthy populations of bears signify a vigorous ecosystem. Adult male bears (boars) are generally 5 to 6 feet long and stand 2 to 3 feet tall at the shoulder. Most boars weigh between 100 and 400 pounds, though some may weigh in excess of 500 pounds; a 740-pound boar was killed in Suffolk four years ago. Adult females (sows) generally weigh between 100 and 175 pounds and occasionally weigh more than 250 pounds.

Bears are omnivorous, like humans, with 75 percent of their diet consisting of vegetation. Versatility in diet is a hallmark of an adaptive species, and black bears consume a wide variety of foods including berries, fruits, nuts and acorns (collectively known as mast), grasses and forbs, insects and grubs, crops (especially apples, peanuts and

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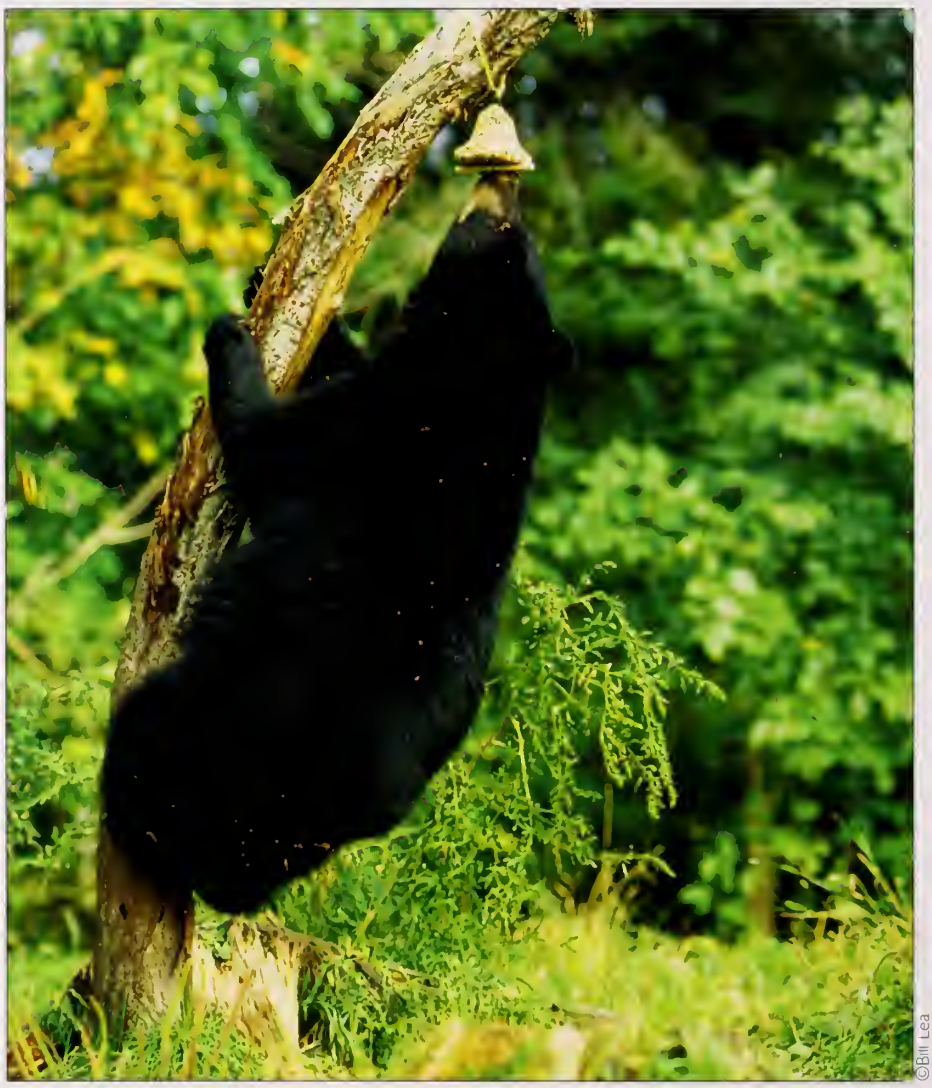

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Black bears are omnivorous, but prefer to eat vegetation. When given the opportunity they will gladly take advantage of an easy meal.

corn), and carrion. Bears will also feed on rodents and occasionally on deer. Garbage, bird seed, pet and livestock food, vegetable gardens and fruit trees can attract bears to houses and yards.

Like all large animals, black bears often require a sizable territory in which to feed, reproduce and find cover. According to the state's Bear Management Plan, in the Allegheny and Blue Ridge mountains "female home ranges vary between 1 and 51 square miles while male home range sizes are 10 to 293 square miles," and studies in the Southeast indicate that "the observed minimum areas that supported bear populations were 79,000 acres for forested wetlands and 198,000 acres for forested uplands." While the mighty grizzly requires substantial expanses of contiguous wilderness, black bears are able to adapt to smaller forested tracts, so long as travel corridors such as streambanks with riparian buffers remain available. Thus the black bear has been able to live, and in many places thrive, near heavily populated areas along the eastern seaboard.

Depletion and Recovery

A century ago habitat destruction and overhunting had severely reduced bear numbers throughout their Southern Appalachian range. In 1974 the Virginia Department of Game and Inland Fisheries (VDGIF) closed 66 counties to bear hunting and instituted a shortened hunting season that opened later in the year. This measure increased female survivability as sows, hibernating earlier than boars, were not as obtainable to hunters; the resulting 8 percent annual decline of females killed led to increased cub production. "Last year we had a record number of 1,510 recorded bear kills in the state, in part because of changes in the hunting season," says Dennis Martin, Bear Project Leader for VDGIF. "Our data indicate that the state's bear population grew at approximately 6 percent annually over the last decade due to population monitoring, coordinated management ef-

forts on public lands, and increased hunter awareness of bear management objectives. Most bears are found on public lands, but private lands, particularly in the Piedmont, are seeing population increases due to the reversion of abandoned farmlands to early successional forests." Ironically, the ongoing tragedy of declining family farms has provided something of an opportunity for bears and other wildlife—needed compensation to offset the sprawling suburban development that is claiming so much of the rural landscape.

Bear populations grow slowly because of their limited reproductive capacity. "Bears have the lowest biotic potential of any North American mammal except the musk ox," says Martin. "The failure of a mast crop can have a long-term effect on bear numbers, and may reduce both the number and survival rate of cubs." Wildlife managers like Martin worry about exotic plagues such as Sudden Oak Death Syndrome, currently devastating oak groves on the Pacific coast, and the gypsy moth, which can dramatically change forest structure and thus critical sources of mast in a very short time. Lack of natural provender increases the likelihood of "problem bear" complaints, as the omnivores turn to garbage cans, cornfields and apple orchards in search of nutrition.

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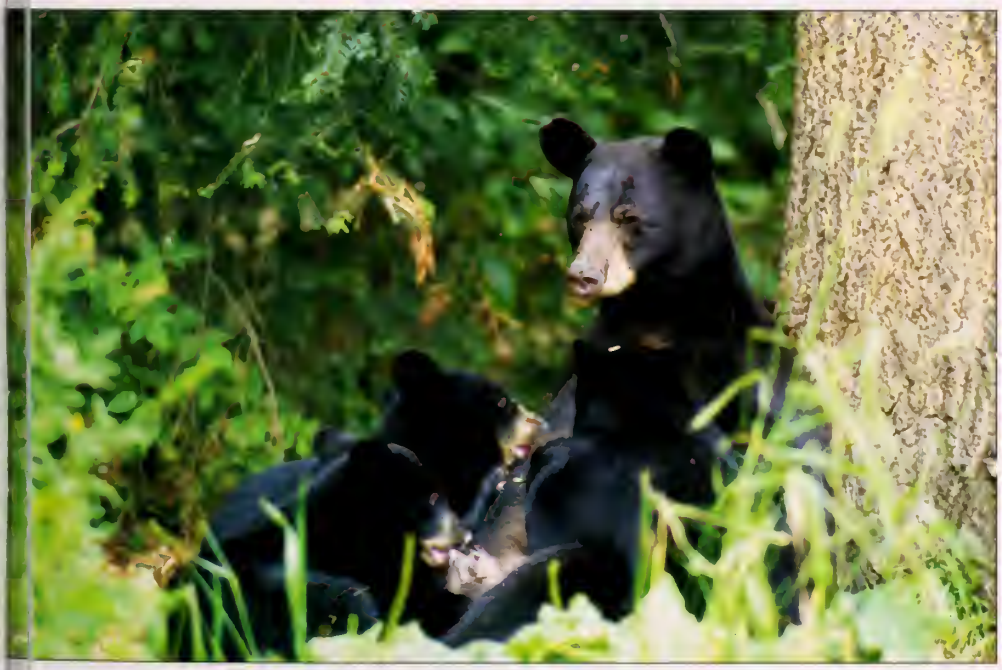
Living in Bear Country

While there is not a single documented case of a bear attacking a human in Virginia, hikers in bear country need to be aware of some basic behavioral aspects. "Grizzly bears evolved on the wide-open plains and mountain drainages of the West," says Michael Pelton, "where there was nowhere to hide and any threat to themselves or their cubs had to be met with force; that's why they are inherently aggressive. Black bears developed in dense Eastern forests, where their standard defensive reaction was to climb trees or flee through the brush." These differing behavior traits dictate the proper response of a human feeling threatened by a bear. "A grizzly will usually feel that his space has been invaded and perceive the person as a threat," says Pelton. "The best thing to do with a charging adult grizzly is to assume the fetal position, protecting the head and neck, and play dead, which effectively removes the 'threat.' Except when a sow is defending her cubs, a black bear's aggressive posture generally indicates that the bear considers the person to be a potential source of food—such 'nuisance' or 'problem' bears are typically those that have been repeatedly exposed to picnic areas and garbage dumps. In these rare instances the recommended procedure is to act aggressively toward the animal, raising your arms over your head to appear larger, screaming, even throwing rocks. Running away only triggers the pursuit response, while a person playing dead might be interpreted as an easy meal."



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A female black bear, called a sow, will normally have two to three cubs in a litter. Cubs will stay with their mother up to 17 months.

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As the natural habitat of the black bear continues to decrease, chance encounters with humans will continue to increase.

Common sense is your best friend in bear country, says Pelton. "Be aware of protective sows with cubs emerging in the spring, and se-

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Use a little common sense when in bear country. Leaving food unprotected while in the outdoors is not a good idea. To place or distribute food, minerals, carrion, or similar substances to feed or attract black bears is unlawful in Virginia.

cure food supplies when camping. Simply put, people should keep their distance from wild bears—these animals just want to be left alone, but they are powerful and often unpredictable."

Crimes against Bears

Much more often it is the bear who suffers at our hands, as some see wildlife merely as an opportunity for brutal exploitation. Recently in Pittsylvania County a man was arrested for luring a wild bear into a cage, dragging it behind a tractor to the man's home, and imprisoning it for many days while hunting hounds were "blooded" by attacking the animal. At the same residence investigating officers found the decomposed remains of a bear with a 55-gallon barrel wedged over the animal's skull; it was speculated that this bear, having been rendered defenseless, had been subject to similar attacks by hounds. Such infantile and sadistic behavior enrages conservation officers, the general public and honest hunters, who rightly see these infrequent but appalling instances as fertile ground for anti-hunting sentiment to build upon.

The prospect of financial gain can also lead to wildlife crime. In January 1999 the public learned of an undercover investigation of an illegal poaching ring that had been trapping and killing bears for their paws and gall bladders, prized commodities on the black market. Evidence obtained during this investigation and previous covert efforts led undercover agents of VDGIF and the National Park Service to set up a sham outdoors store called the Dixie Emporium in Elkton, near Shenandoah National Park, where they made themselves available to sellers of bear parts and Appalachian ginseng, another natural resource vulnerable to poaching. The agents posed as middlemen for a network of buyers who were known to have shipped Virginia bear parts to North Carolina, Washington, D.C., Maryland, West Virginia, New Jersey, New York, California and South Korea. With populations of the Asiatic black bear collapsing, demand for its close cousin in the U.S. has heightened and the growing Asian communities in and around the nation's capitol have been recruited for the acquisition and overseas shipment of illicit bear parts.

After three years of intense covert activity, Operation VIPER (Virginia Interagency Effort to Protect Environmental Resources), as the Elkton undertaking was officially known, resulted in a total of 487 state violations (193 felonies and 294 misdemeanors) and 204 federal violations (99 felonies and 105 misdemeanors) against over 100 individuals. One of the chief frustrations for game wardens involved in these stings is the generally feeble outcome of local court action—the offending party gets a slap on the wrist that pales with their accumulated profiteering, and poachers come to see minimal fines or jail time as an acceptable risk given the potential reward. But according to Colonel Herb Foster of VDGIF, federal and state attorneys have lately come to see the illegal commercialization of wildlife as a serious issue and have acted decisively to set an example. "Credit for the successful prosecution of these poachers and illegal suppliers goes to U.S. Attorney John Brownlee of the Western District of Virginia and to Commonwealth Attorney Marcia

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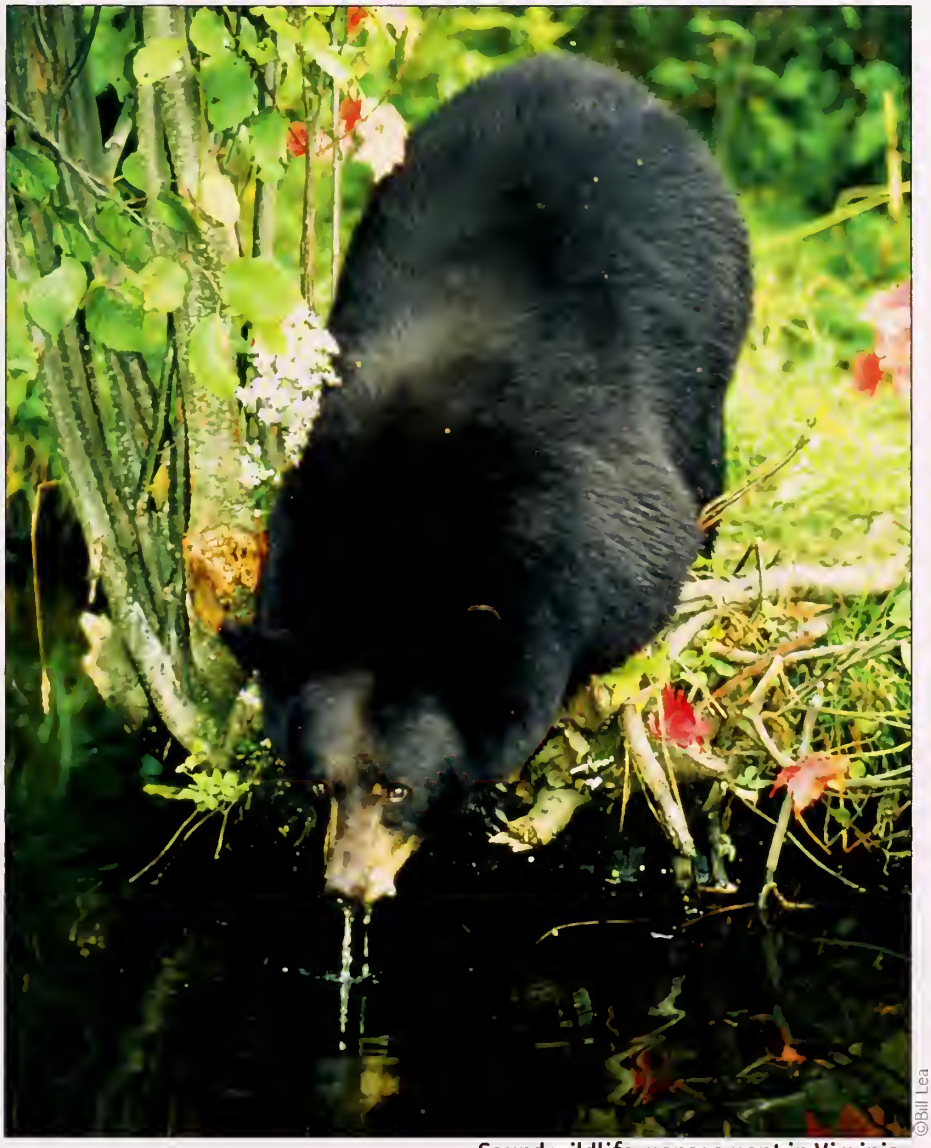
Garst for Rockingham County, who together with their staff members put in a great deal of time to secure needed convictions," Foster said. "Operation VIPER was certainly a success, but the illegal trade in bear parts will unfortunately continue to be a real problem for our state's wildlife."

With the illegal trade in wildlife second only to drug trafficking in profitability, it is certain that poaching will continue to menace Virginia's black bear population, particularly when the profit margin is so great: in Asia a single bear gall is worth upwards of $3,000—more than the street value of cocaine—while one serving of bear paw soup can fetch $1,000. Major Mike Bise of VDGIF was also involved in Operation VIPER and says that hunters and other wildlife proponents can help protect Virginia's bears by keeping their eyes open for suspicious activities in the woods, such as baited tree-stands or traps. "Hunting bear over bait is illegal everywhere in Virginia," Bise said, "as is the sale of any wildlife part, of any species, including meat, teeth and claws." Bise wants outdoorsmen to immediately report notices advertising the sale of bear parts. "Hunters, hikers, birders, anglers and other outdoor enthusiasts are the front line in protecting wildlife populations," he said. "Sportsmen pay for wildlife protection and rehabilitation, and VDGIF depends upon them to act as our eyes and ears in the woods. When poachers steal the public's wildlife, nobody wins but the poachers."



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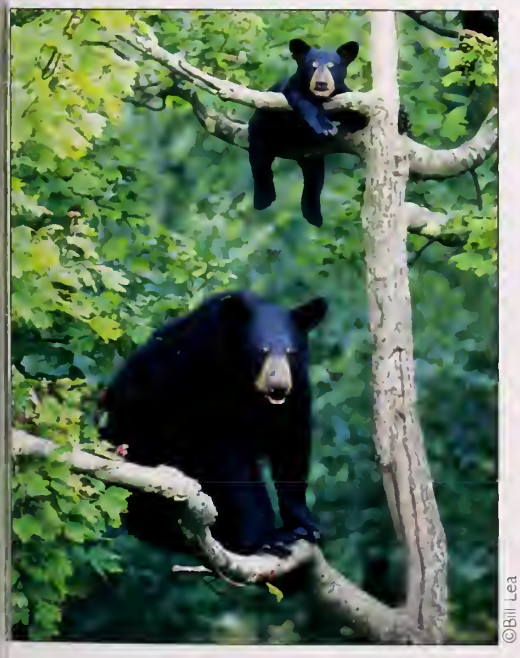
Sound wildlife management in Virginia has resulted in healthy populations of black bears. It has also helped to assure that this fascinating wild animal will remain "the hidden walker of the woods."



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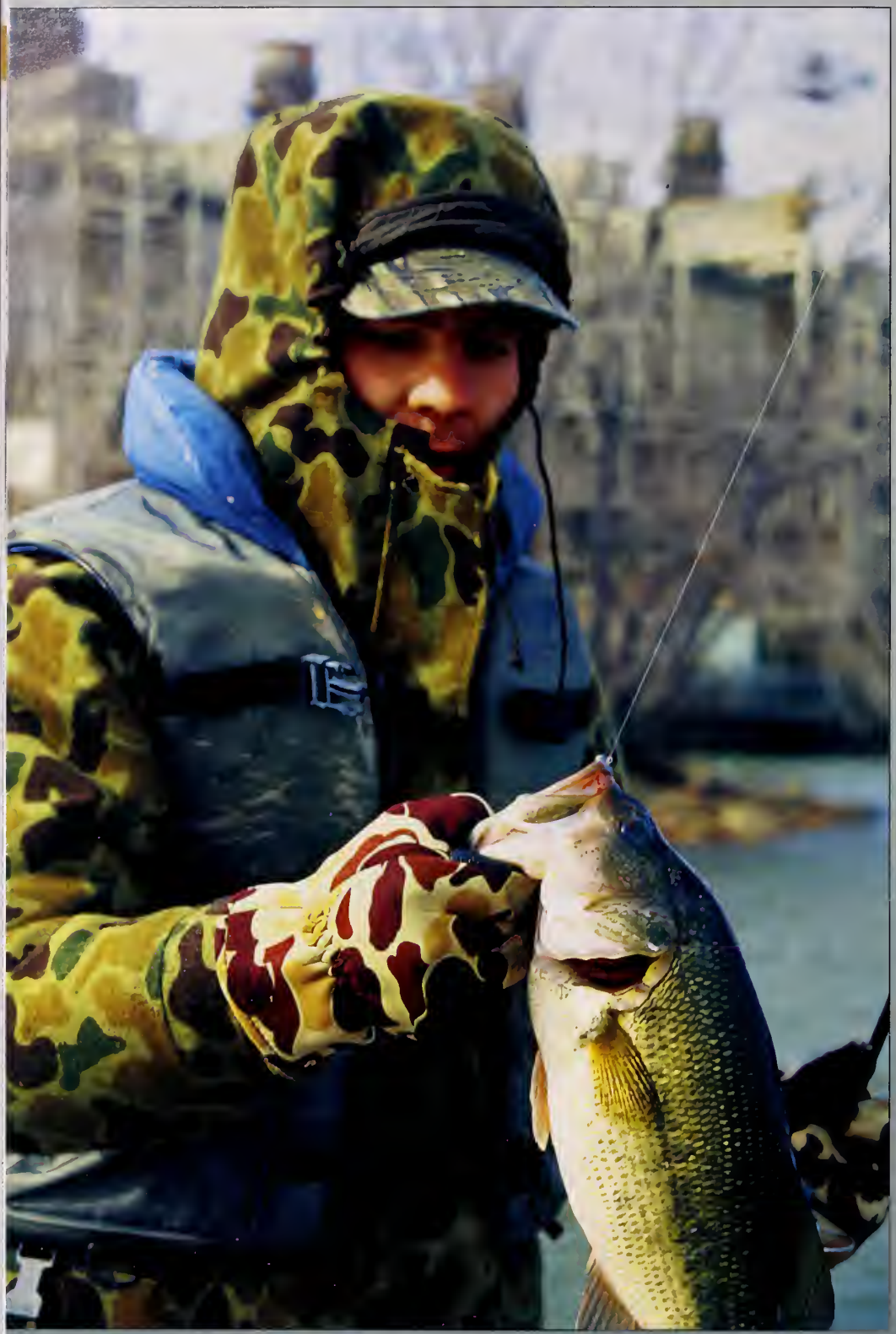
Prince of the Appalachian Forest

The American black bear is a fascinating and iconic animal, a symbol of wildness somehow able to survive in the remnants of undeveloped forests we have wisely saved from destruction. Largely confined to public lands and wholly dependent upon our protection from poachers and habitat destruction, Virginia's bear population is nonetheless showing signs of a healthy comeback after decades of fading away. Like an emissary from a greener, wilder America, the black bear speaks to us of a time when the country was still young. □

William H. Funk is a freelance conservation writer living in the Shenandoah Valley. Mr. Funk has postgraduate degrees in environmental law and policy and has worked in Washington, D.C., Raleigh, N.C. and Staunton, Va. for government agencies and nonprofit conservation organizations. He may be contacted at excubitor@earthlink.net.



Too Cold To Fish?

Don't let a little cold weather keep you from enjoying the outdoors.

story and photos by David Hart

If there's one thing Rich Coffman can count on when he floats the Shenandoah in January or February, it's that he'll have the river to himself. Hard to imagine the Shenandoah without an armada of float-tubers and paddlers on it, but freezing air and floating ice have a way of keeping the thrill-seekers at bay. For some reason, it keeps the fishermen away, too. Not Coffman. Give him a choice between a hot day in July and a cold, dreary day in February and he'll head to the river in the winter without a second thought.

"The hardest thing about fishing in the winter is just finding someone to go with me. I never go alone this time of year, and I only know a few people that actually like to fish in the winter," says the Ashburn resident.

About seven years ago, Coffman, director of operations for a graphics and advertising company, realized that there was no end to the smallmouth season. He kept fishing right through the fall and into winter and before he realized it, he was right back into spring. He never stopped catching fish, but he quickly learned that the size of the smallmouths he caught changed, as the water got colder: They got bigger.

"Winter fishing is definitely about quality and not quantity. You

might only catch one or two fish all day, but they'll be real big," he says.

Like the day in February he was throwing a Lucky Craft suspending jerkbait on the main stem of the Shenandoah. Coffman's lure got hung on a submerged log on one of his casts, but when he yanked it free, he was met with a solid thump of a bass whacking the lure. It was Coffman's first 5-pound smallmouth from the Shenandoah and the only fish he caught all day. He's had plenty of other days where he only caught one or two fish, but they were all big.

Coffman says catching big smallmouths in the winter is all about putting in your time and learning where those big bass prefer to hang in the winter. He's learned to hone in on specific types of water while ignoring the rest of the river.

"I look for long straight-aways, holes behind ledges with broken, chunk rock on the bottom and if they have sunken wood like an old log, that's even better," he explains. "The hole needs to have light current and it can be as little as 4 feet deep."

Coffman and most other winter smallmouth anglers use just a few lures, jig-and-pigs and tubes mostly,

Winter smallmouth fishing on Virginia's rivers usually means dragging jigs across the bottom. It's slow, tedious work, but the reward of a big bass can shake off the coldest chill.

but as that 5-pounder on the Shenandoah taught him, suspending jerkbaits are killer baits, as well. The key to success, he adds, is to fish slow, slow and slower. He'll park on a good-looking hole for an hour or more with the assumption that sooner or later anything worth catching will eat his lure. If he doesn't hook a smallmouth, he moves on, warmed only by the thought that the next hole will produce a big bass.

Largemouth Bass

While most Virginia anglers were cramming themselves full of ham and turkey on Christmas five years ago, Steve Sexton was stealing bites of cold ham sandwich between bass on Lake Gaston. He didn't get much time to eat. By day's end, Sexton had caught and released 112 largemouths, including a dozen over 5 pounds and one that topped 8. So much for the theory that winter fishing means one or two bites on a good day. Sexton, a mechanic for Norfolk Southern, fishes hard all winter on numerous lakes in southeastern Virginia.

"It's easy. I just look for the intersection of a creek channel and the

main river channel. Then I look for bait. If there is bait in the area, I'm going to catch fish," says Sexton. "Winter bass fishing is just like summer fishing. The bass are doing the same thing. The only difference is the lake is deserted."

Sexton won't make a cast until he finds one key ingredient: bait. The presence of shad or herring is vital to his success, and he will only fish an area if he sees clouds of bait on his depth finder screen. When he finds bait, he uses a variety of lures, but contrary to popular wisdom, Sexton fishes virtually as fast in the winter as he does the rest of the year, no matter what the water temperature.

"I'll throw crankbaits, Silver Buddies, black and blue jig-and-pigs, Sassy Shads, bucktails, anything that looks like a baitfish," he says. "You never know what you'll catch in the winter. Crappie, walleyes, stripers all hang out around the bait this time of year."

Stripers

Mike and Bobby Fowler have a quiet reputation as two of the best striped bass anglers in the state. The two brothers fish hard 12 months a year, targeting striped bass on several lakes throughout Virginia. Both used to live in Williamsburg and were regulars on Little Creek and Waller Mill reservoirs. Mike still lives east and still fishes those two lakes; Bobby now lives on Smith Mountain Lake and fishes for stripers almost daily.

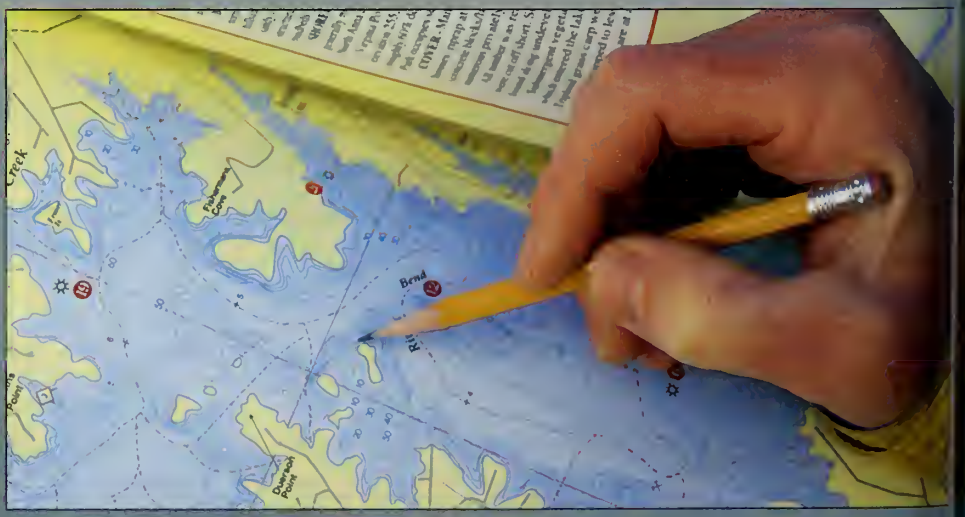
"I'll take winter any day. If it's snowing, look out. You can really clean up," says Bobby Fowler. "You just have to fish slower and deeper, but the action can be as good in the dead of winter as any other time of year. I caught my biggest Smith Mountain Lake striper on January 3rd. It weighed over 24 pounds."

Fowler says the key to winter striper fishing is to find bait. He typically starts searching in the middle sections of the several lakes he fishes and works his way toward the dam. Striped bass tend to migrate toward the lower ends of Virginia's reservoirs in the winter, stopping along points and bends in the main river channel along the way. They go where the bait goes.

"Sometimes the fish will push bait up to the surface and you can get some great topwater action, but it doesn't usually last very long. It's a matter of being in the right place at the right time," he says. "Most of the time, I'm going to use live bait on down-lines. I try to mark fish on my depth finder first. That will tell me how deep to set my baits."

Don't want to mess with live bait? Fowler suggests throwing

Left: The presence of shad or herring is the key to finding largemouth and striped bass when the weather turns cold. Below: The two most important tools for winter anglers are a map and a good depth finder.



bucktails to points closest to the main river channel or major creek channels and swimming the lures back to the boat while following the contour of the bottom. Sassy Shads, Zoom Super Flukes and Fin-S minnows rigged on quarter-ounce jig heads are also good choices.

Virginia's fishing never really shuts down. Crappie, catfish, pickerel, trout, perch, walleye, even sunfish will eat a lure or bait, no matter what the weather. If you look hard enough, you can always find something willing to bite, even now. □

Cold Water Safety

Taking a bath on a hot summer day is little more than fodder for a good laugh after you climb back in the boat. Falling overboard in the winter can kill you. Here are a few safety tips:

- Always wear your life vest. The extra clothes you'll be wearing will pull you under in a matter of a few seconds.
- Never fish alone. A partner cannot only boost morale in a time of crisis, he can help you back into the boat or on to shore.
- Set a plan, tell someone and stick to it. If something does happen, rescuers will know where to begin their search.
- Know your limits. Running a set of Class III rapids is great fun in the summer, but foolish in the winter. Fish rivers only when water levels are low.
- Carry emergency gear. An extra change of clothes, a towel, tools to start a fire, a little extra food and a cell phone can keep you alive after a dunking in frigid water.

David Hart is a freelance writer from Rice, Va. He is a senior writer for BASS Times, *a regular contributor to* Petersen's Hunting, Bassmaster, Southern Sporting Journal *and many other national publications. He is also the author of* Fly Fisher's Guide to Virginia, Including West Virginia's Best Waters *(Wilderness Adventures Press, 2002).*

Living Easy On

Beneficial land management makes its mark on Virginia countryside.

by Bruce Ingram

Not too many years after Jack Spigle took over Penn Farm in 1967 from his father-in-law, he began to have doubts about how the Botetourt County cattle farm on the James River was being run. Spigle had always been both a hunter and a conservationist and cared deeply about wildlife.

"I could see the negative impact that my cattle operations had both on the streams that flowed through my land and the James River," says Spigle. And I also knew that what was happening on my land ultimately had a negative impact on the Chesapeake Bay. The cattle were lounging in my three creeks and degrading the stream banks. And the bottomland on my property didn't have any quail—much of the vegetation was gone. It was very obvious to me that where you have cattle, you don't have quail.

"I have been a quail hunter my entire adult life, and I grew up on a farm where my brother and I had to take care of the cattle. So I badly wanted to implement practices on Penn Farm that would be good both for cattle and for quail and other wildlife."

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Above: Jack Spigle examines a stand of switchgrass on his farm. The switchgrass lies behind a fence and in front of a woodlot. The area is an oasis for quail, rabbit and other game, along with nongame wildlife.

The Land

The information that Spigle needed in order to accomplish those twin goals was found at what is today such organizations as the Farm Service Agency (FSA), the Natural Resources Conservation Service (NRCS), the Virginia Cooperative Extension (VCE), the Mountain Castles Soil & Water Conservation District (MCSWCD), the Department of Conservation and Recreation (DCR), and the Virginia Department of Game and Inland Fisheries (VDGIF).

What's more, farmers and landowners often don't have to bear the full cost of implementing practices that are beneficial for their land and for wildlife. The Virginia Agricultural Best Management Practice (BMP) offers 75 percent cost share and a 25 percent tax credit. Tax credits are also available on eligible voluntary conservation practices subject to prior approval. What this means is that a government agency will pay 75 percent of the total cost on projects, for example, that reduce sediment, erosion or nutrients entering streams. Then the landowner will receive a 25 percent tax credit for the rest of the price. If, for example, a project cost $1000.00, the landowner would receive $750.00 (or 75 percent) and then on the remaining $250.00, the landowner would receive $62.50 (which is 25 percent of $250.00). As Spigle notes: "Farmers are tax payers and they should take advantage of these services. These organizations have great people working for them, and they are available to give technical assistance."

For example, one of the practices that Jack Spigle implemented was to fence all his streams and woods, thus excluding cattle from those areas. For the former, besides reducing erosion and the amount of pollution entering the streams, the landowner created valuable riparian habitat for wildlife. Spigle also has planted trees along the fenced in streams. By fencing the farm's woodlots, the Botetourt County landowner was able to make his land more hospitable for deer, turkeys and numerous game and nongame species. Cattle can do great damage to the forest floor and vegetation if allowed to roam through woodlots.

Another practice that Spigle implemented was rotational grazing of paddocks, which improves soil and plants and results in better animal growth and performance. A paddock is often referred to as an enclosure within an overall fenced area.

A well-maintained farm can be beneficial for both domestic and wild animals.

For example, Jack will often have his cattle confined to one paddock while two nearby paddocks regenerate.

Last July, I visited Spigle at Penn Farm. The first place he took me was to one of his frost proof water tanks. Water runs from a well through pipes to the tank, and cattle press on a ball on top of the tanks. When the ball lowers, the bovines then can drink. As impressive as this system is, what I found to be truly ingenious is how the water tanks dot Penn Farm. For example, Spigle has placed tanks where two or three paddocks intersect. That way, he doesn't need as many tanks or pipelines—or the expense of constructing them.

Another aspect of the farm that Spigle is justifiably proud of is his songbird population. When I departed from my car, barn swallows immediately flew over me, and several mourning doves flushed. After

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Above: Fencing off stream banks from cattle provides good habitat for a variety of wildlife species, such as frogs and deer. Below: Jack Spigle uses special water tanks on his farm, which require cattle to drink in a limited area, helping to reduce their impact on the land.

we left the water tank, Jack had to make a stop to check one of his bluebird nesting boxes. All in all, I probably heard or saw some 20 species of avians during the two hours I toured the farm—not bad for a hot July day.

Our next stop was at one of the paddocks that was regenerating. In some places, the vegetation was several feet high while on the other side of the enclosure, cows were contentedly consuming grass. Jack told me that he had no set time for when he would move his cattle from the paddock they were in. Such factors as rain, vegetation growth and number of cattle all affect how long livestock will take to crop the grass to a level that makes it necessary for them to be removed to another paddock.

As an angler and a fan of the James River, I was highly impressed with what Spigle is doing to improve water quality. At Penn Farm, thanks to the fences that run parallel to all sides of the three creeks and along the bank of the James, the

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Jack Spigle examines deer tracks along one of the streams that flow through his property. With government assistance Spigle has fenced in his streams creating an ideal riparian buffer.

water flows clean and clear past heavily forested and vegetated shorelines. Once, Jack stopped to show me a deer track along one of his streams. The water was cool to the touch. Pickerel frogs leaped into the water and minnows darted away.

Jack Spigle has a passion for quail and bird hunting, and that fervor shows in one of his current projects.

"I am trying to eliminate fescue from areas of my farm," he told me. "Quail chicks just can't survive in fescue. The stuff is so thick that they can't make their way through it. Quail need fairly open ground with a canopy overhead."

With his desire to improve the bobwhite population, as well as benefit other wildlife, Spigle is planting such things as switchgrass, partridge pea and clover. He also regularly conducts controlled burns, typically a parcel is burned every three years. Right after a controlled burn, wildlife as diverse as deer and turkeys and field sparrows and meadowlarks will congregate. Later, early successional plants such as ragweed, poke berries, dewberries and blackberries will entice wildlife.

Where to Find Help

After arriving home from visiting Jack Spigle's farm, I called Ned Jeter, conservation technician for MCSW-

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Making Land More Hospitable for Quail and Other Wildlife.

Department biologist Marc Puckett emphasizes that farmers are not the enemy of wildlife and that cattle and quail can go together with the proper adjustments. As he notes: "My number one concern is the preservation of the family farm and the farming way of life. When we start to lose farms to other uses, we lose wildlife as well."

Steps to take:

- ✔ Obtain aerial photo of property. This helps landowners look for opportunities to help wildlife and to develop a plan or goal.
- ✔ Decide whether you want more or less of a specific game or nongame species.
- ✔ Obtain publications on topics such as warm season grasses, food plots and wildlife needs. Examples are Beyond the Food Patch: A Guide to Providing Quail Habitat and Successful Wildlife Plantings. Check VDGIF's Web site for more information.
- ✔ For wildlife and especially for quail, position fences creatively. For example, a fence placed 25 to 30 feet from a woodlot will allow a variety of plants to flourish. Landowners also could plant lespedeza in this area and spray to kill fescue.
- ✔ Work with existing native plants.
- ✔ Fenced out areas along streams are good places to plant partridge peas and lespedeza, for example.
- ✔ Plant warm season grasses such as switchgrass, Indian grass and big bluestem. Bottomlands are good places to establish these plants.
- ✔ Perennial food plots are better than annual ones, both from cost and soil standpoints.

CD, and a farmer from a family of farmers. I asked Jeter if the Commonwealth's farming community was aware of the many beneficial programs available.

"Some farmers are very skeptical of these programs," he told me. "And I must admit that as a farmer myself, I too had doubts before I took this job. I just couldn't get over the fact that many of the programs took land out of use. How were my cattle going to get water if they were prevented from entering creeks? I was also skeptical of the benefits of riparian zones."

"But then I began to visit farms like Jack Spigle's and saw firsthand how these programs were working. A farmer who has developed projects like water fountains, riparian zones and the paddock system of rotational grazing is able to put more cattle on less land and that translates into greater benefits and profits for the landowner. And the result is better for the environment and wildlife. What you have is truly a win-win situation.

"I also have found that all it takes is one or two farmers in an area to implement these practices, and then the whole farming community will look at the practices in a different light. I just need one or two movers and shakers to start things rolling."

Many farmers enjoy seeing and hearing songbirds on their property. Jack Spigle has placed bluebird boxes along his fencerows.

Jeter details some of the additional innovative practices available. The 75 percent cost share and 25 percent tax credit program is available for a number of these projects while for others, landowners will receive incentive payments per acre.

Idle Land/Wildlife Option: Jeter describes this as a very simple program to implement. If land has been row cropped, disked, or plowed or if small grains have been harvested, then the land can be left alone so that natural vegetation for wildlife can grow.This practice receives a one-time incentive payment.

Buffer Strip Cropping/Strip Cropping System: Instead of having one crop planted over an entire area, this program encourages farmers to sow two or three different plants that mature at different times in narrow rows. These strip crops are then harvested at different intervals so that soil erosion is reduced. That way, if the parcel is subject to erosion, the crops not harvested will serve as buffers for those which have just been removed. For example, Jeter says that farmers could plant a parcel in strips of ladino clover, orchard grass and kobe lespedeza and alternate those strips across the property instead of just

A Few of the Conservation Partners Available.

Mountain Castles Soil and Water Conservation District (MCSWCD) www.vaswcd.org

Virginia Cooperative Extension (VCE) www.ext.vt.edu

Natural Resources Conservation Service (NRCS) www.nrcs.usda.gov

Farm Service Agency (FSA) www.fsa.usda.gov

Department of Conservation and Recreation (DCR) www.dcr.virginia.gov

Virginia Department of Game and Inland Fisheries www.dgif.virginia.gov

Virginia Outdoors Foundation www.virginiaoutdoorsfoundation.org

having three large parcels of those plants.

Woodland Erosion Stabilization: When a landowner logs his property, this program enables him to stabilize the logging road and any steep slopes nearby. Switchgrass, clovers and various warm and cool season grasses can be planted along the road or logging deck. Landowners who are hunters or allow hunting should especially look into this program, as it is very beneficial for deer, turkey and quail, as well as many songbirds and other nongame species.

Continuous No-till System: "Every time, you turn soil, you can cause erosion," says Jeter. "And the ground can take several years to recover. With a no-till drill, which acts likes a serrated knife, the only soil that is disturbed is the exact spot where the seed enters the ground. After a small grain crop is harvested, a farmer can plant alfalfa or orchard grass as a cover crop. The plant residue from the small grain crop acts as ground cover for a second crop, thus reducing the amount of nonpoint source pollution."

Reforestation of Erodible Crop and Pastureland: A very simple program that helps a landowner to plant trees in, for example, riparian zones.

©Maslowski Photo

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Planting certain trees and setting aside an area behind or along fences are just two ways to help create better habitat for wildlife.

Farm Road/Heavy Traffic Animal Travel Lane Stabilization: "Let's say, there's a creek on a farm, and, for whatever reason, the cattle have to go through it," says Jeter. "This program will help the landowner find a spot to create a lane that will only be about 8 feet wide and has a gradual grade. Also, the lane will be created at a location without any shade so the animals won't linger in the stream. And to reduce erosion, we'll line the lane with different size stones."

Permanent Vegetative Cover on Critical Areas: This program is especially beneficial if a landowner has a barren hillside riddled with gullies. The hillside can be graded, limed, fertilized and heavily seeded at twice the normal rate with plant species beneficial to wildlife.

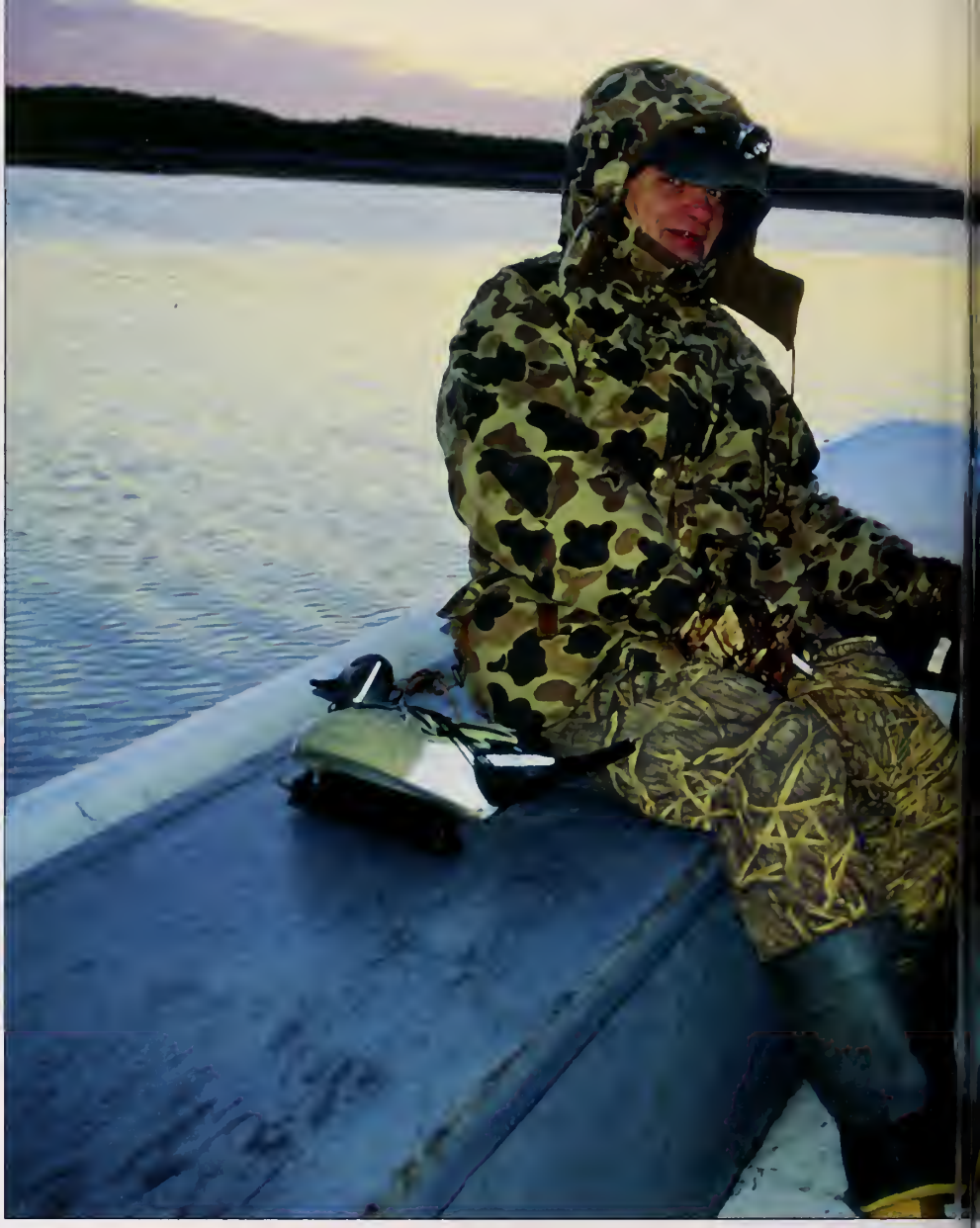
Permanent Vegetative Cover on Cropland: This program enables the farmer to receive money not to plow/disk highly erodible land near streams. Jeter says he tries to encourage this program everywhere because the taxpayers "get the best bang for their buck" when highly erodible land is removed from the planting schedule. To benefit from this program, farmers also have to plant a permanent crop such as orchard grass or a mixture of legumes. As Jeter notes: "Fifty tons of soil per year can come off an acre of land near a stream. Water can move dirt like nothing else."

After the tour at Penn Farm as we drove back to the barn, I remarked about how many projects Jack Spigle had ongoing.

"Trying to make a farm better for wildlife is not just a one-or-two-year deal," he replied. "It's a lifelong project."

Such is indeed the case, and hopefully many of Virginia's farmers will be able to implement many of the practices that Spigle and other creative, dedicated landowners have been able to do. □

Bruce Ingram is the author of three books: The James River Guide, The New River Guide and The Shenandoah/Rappahannock Rivers Guide. *For more information, contact Ingram at be_ingram@juno.com or Ecopress at (800-326-9272) or www.ecopress.com.*



Duckin' in on

Late season waterfowl hunting on Virginia's Eastern Shore is a great way to warm up a frosty adventure.

story and photos by Ken Perrotte

Steady winds from the north had blown out the last of the weekend's overcast and the brightly twinkling stars in the pre-dawn hours forewarned of how this early morning would shape up — bitter cold.

While sane individuals snuggled comforters tighter to their chins in warm beds and bemoaned not having thrown an extra log or two in the woodstove, duck hunters were loading into Randy Birch's 24-foot Carolina Skiff.

Stiff legged in heavy winter waders and layered in long johns, sweaters and parkas, we took up seated positions along the wooden boxes housing dozens of decoys carefully arranged by species.

It took a little effort to bust the boat through the iced-over waters near the mooring, but eventually we were underway. Our own faces were snuggled inside hoods and balaclavas, chins drawn tight to our chest, as the boat zipped through the numbing morning air. Yes, somebody just might catch heck this morning. We hoped it'd be the ducks and not us.

Far left: Decoys rest on the Carolina Skiff's gunwale as morning's first light begins creeping over the marsh channels of Chincoteague. Wayne Correia (left) of Hanover and Jimaye Sones of Chester wait for their turn to move into a duck blind.

Chincoteague

The marshes around Chincoteague and Assateague islands at the northern end of Virginia's Eastern Shore are the stuff of legend, dating to the infamous days of the market hunters and glorious years when the skies could literally darken with migrating waterfowl.

It's not difficult to imagine a time when only a handful of hearty souls called the area home and this tangle of lagoons, marsh channels and creeks represented a challenging Eastern frontier. Today, the Chincoteague waterfront features an eclectic mix of large, opulent homes interspersed with modest, cozy dwellings built in a bygone time.

The only soul in the boat seemingly oblivious to the cold was Wayne Correia's beautiful chocolate Labrador retriever Brinley. Full of that anticipatory, nervous energy that makes duck hunting with a Lab so much fun, Brinley couldn't wait to get out of the boat and into a blind.

Correia, of Hanover County, is obviously an incurable romantic as well as a duck fanatic, having named his dog after Newport, Rhode Island's Brinley Victorian Inn, a special place where he courted his wife Joanne.

We periodically lifted our eyes and glimpsed at the silhouette of the Assateague Lighthouse, watching

Far left: Randy Birch positions decoys on his boat as a crew of duck hunters moves their gear into the blind at the start of a morning hunt. Left: Randy Birch leans away while Wayne Correia shoots at a duck that seemingly appeared from nowhere.

its beam rotate methodically in the darkness. A short distance later, it was time to offload the first blind of hunters, a trio of high school educators from Wilkes-Barre, Pa.

Birch flipped open the tops of the bird boxes and began pitching decoys. Black ducks to the left of the blind, buffleheads and mergansers out front. A couple shovelers were grouped to the right.

Birch makes his own unique bufflehead and merganser dekes from crab pot buoys.

The plan was to hunt puddle ducks at daybreak in the creeks and marsh channels just off the refuge and then move to the "big water" of Chincoteague Bay at midday to try for Atlantic brant and diving ducks.

The morning shooting was sporadic with a mixed bag of black ducks, gadwall, pintail, buffleheads, mergansers, and a hen mallard taken between our blinds.

For two solid hours we watched wave after wave of snow geese and Canada geese rise from the Chincoteague National Wildlife Refuge. Even the laziest flyers would gain enough altitude to remain 100-150 yards over our blind. The snows' yodels pierced the crisp air and their white bodies framed perfectly against the incredibly deep blue sky. Seeing those thousands of birds leaving the refuge was an incredible experience.

Birch, a waterman who crabs for a living in the warmer months, handles his boat like a pro in the stiff wind, fishing the entire decoy spread from the water and stowing them in their compartments in just 15 minutes. Several of the wild ponies of Assateague nonchalantly looked up from their shoreline grazing as our boat passed by.

Ice had formed extensively along the edges of Chincoteague Bay and the smaller pockets of water that played off the main channel enroute

Wayne Correia of Hanover talks to his dog Brinley after the morning's first black duck is brought into the blind.

to the favored area for hunting brant. The ice rendered many of Birch's favorite blinds inaccessible.

The wind was generating an ugly surface chop of tall whitecaps. Salt spray blew over the windward side of the skiff, assaulting our backs and freezing on the spot to our parkas. Birch stood almost statue-like, firmly grasping the tiller of the 75-horse Mercury outboard and fixing his eyes into the icy wind.

"I sure don't want to read about myself in *Outdoor Life* magazine's 'This Happened to Me' section," half-joked John Sulcoski above the outboard's din, a little concerned about the boating conditions.

Flocks of brant were formation-flying low over the water all around us, but Sulcoski's concerns were borne out when it became apparent

Above: Hunters in a big water blind on Chincoteague Bay get ready for some Atlantic brant action. Below: Wayne Correia walks through the marsh grass behind his blind with his dog Brinley, after recovering a downed duck.

it would be too difficult for some in our party to climb into a slick blind from a slick boat while waves battered the skiff against the blind's legs. We retreated to blinds in calmer waters and proceeded to close out an exciting day of Chincoteague waterfowling.

Back on warm, dry land, Birch showed me his decoy making workshop and a comfortable den loaded with Chincoteague memorabilia, including carvings and wood-burned engravings crafted by his late father Bob, as well as a "rabbit trap" made by "Cigar" Daisey, one of the Eastern Shore's most colorful waterfowl legends.

For sure, there are near infinite good reasons for the outdoor lover to visit Chincoteague and the Eastern Shore year-round. Once the early

Left: Randy Birch examines one of his merganser decoys, crafted from old crab pot buoys (the bullet-shaped object standing at the rear of the table behind Birch). Randy's father, the late Bob Birch, was an artist as well as a waterman. He created many pieces of Chincoteague folk art commemorating life on the island.

winter winds begin to turn ugly, though, amid the urgent honks and yodels of geese, those frosty gusts also carry faint echoes—the voices of generations of waterfowlers softly, then urgently calling out.

"Get ready. Here they come. Steady. Steady. Take 'em!" □

Ken Perrotte is a writer living in King George, Va. He writes the outdoor column for the Fredericksburg Free Lance-Star, *as well as outdoor articles for many other publications.*

Outdoor Adventure Information

Waterfowl hunting on Virginia's Eastern Shore
Randy Birch
757-336-6343 or 757-336-6181

Eastern Shore of Virginia Tourism
Post Office Box 460
US Route 13 South
Melfa, Virginia 23410
Phone: (757) 787-2460
http://www.esvatourism.org

Chincoteague National Wildlife Refuge
P.O. Box 62
Chincoteague Island, VA 23336
Phone: (757)-336-6122
http://chinco.fws.gov/introduction.htm

Left: Ohioan Steve Suder shows off a nice brant he collected during a cold afternoon hunt near Chincoteague.

Something Fishy

by Carol A. Heiser and Dan Michaelson
illustrations by Spike Knuth

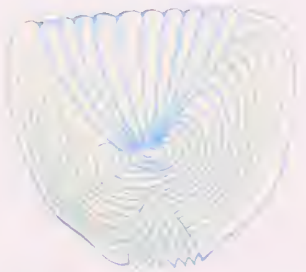
Of all the creatures that live in water, fish are probably the most universally recognized animal. They occur in all shapes, colors and sizes, in habitats as varied as the frigid waters of the Antarctic, the hot springs of the western U.S., or the depths of the saltiest seas. Many have peculiar habits and remarkable behavior that includes migratory treks, territorial displays, and symbiotic relationships with other aquatic species.

The Nature of Fish

Although there is tremendous variation among fish species, most of them have several characteristics in common. First, there's the torpedo shaped body that provides the fish with a streamlined profile to move with the least amount of resistance through the water. Second, there's a definite logic to their coloration: in general, fish tend to be dark-colored above and light-colored below. This is an adaptation that helps protect them from predators. A predator swimming below the fish has a hard time seeing the fish's light-colored belly against the backlighting from the sky above. A predator looking down on the fish, such as an osprey, has a harder time distinguishing the fish's dark-colored back in dark or murky water.

Fish have other unique adaptations as well. Most bony fish are covered with scales and slime to protect them from microorganisms in the water. In many species, the scales grow throughout the life of a fish, formed from bony tissue that is laid in concentric rings. A biologist can, therefore, age a fish by counting the rings on the scales.

A specialized air bladder gives fish the ability to control what depth in the water they swim. The thin-walled, hollow sac is used to regulate the fish's density in relation to the density of the water around it. Anoth-



Top: The undersides of most fish are lighter in color. This helps to protect them from predators. Above: To learn the age of a fish biologists will count the rings on their scales.

By passing water through their nostrils fish can detect odors that help them locate food and know when predators are in the area.

er distinctive feature is the lateral line, a series of sensory cells running up and down the length of the fish's body that can detect low frequency vibrations from water movement. The lateral line gives the fish an additional way to "read" its environment and sense when a predator may be nearby.

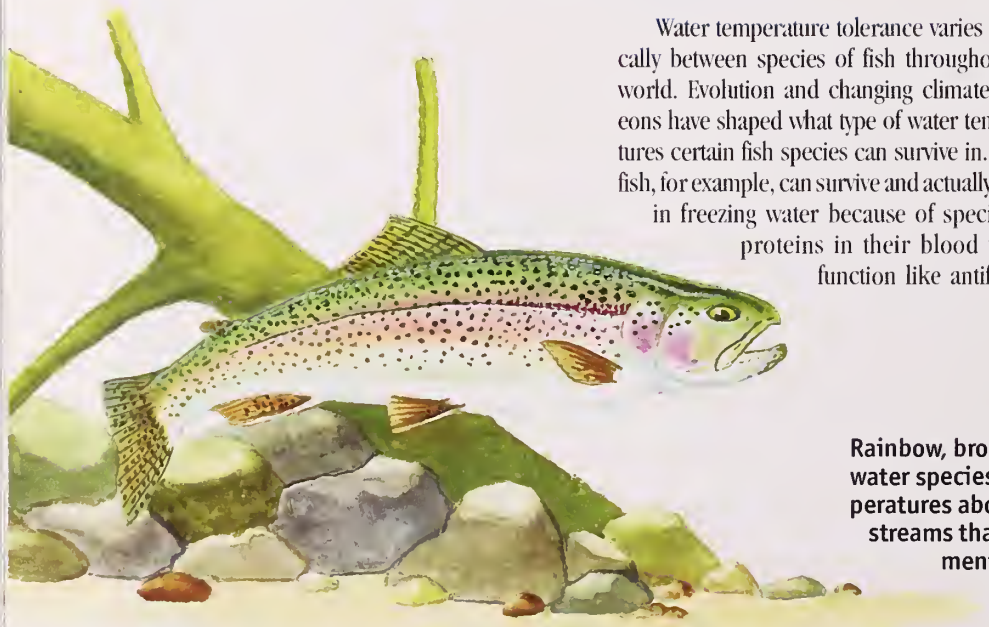
You might not think that fish would have a very good sense of smell, but they can easily detect odors in the water with their nostrils. Some species of migratory fish use the odors to help them identify and return to the home where they were spawned. In other cases fish release their own odors called pheromones, a chemical signaling system that can communicate danger to other fish in the school when a predator is near, or that can be used to attract a mate.

Cold and Warm Water Survival

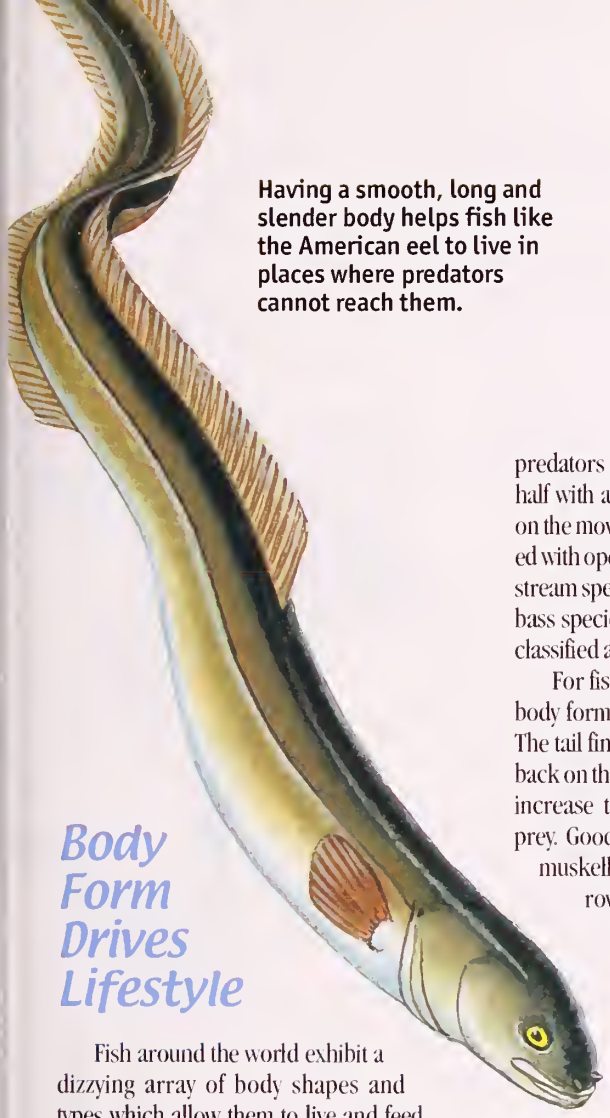
Water temperature tolerance varies drastically between species of fish throughout the world. Evolution and changing climates over eons have shaped what type of water temperatures certain fish species can survive in. Arctic fish, for example, can survive and actually thrive in freezing water because of specialized proteins in their blood which function like antifreeze. These blood proteins give the body fluids of the fish a lower freezing point than the surrounding water. Other fish are adapted to the hot water present in the tropics and thrive in sustained water temperatures over 100°F.

Closer to home, we also have fish adapted to cold- and warm-water habitats. Trout in Virginia have evolved to tolerate only water temperatures below 70° F, and they will quickly die if water temperatures climb above this level for any duration. Thus, trout in Virginia are found in the cold, mountain streams of the southwestern part of the state, where the fish prey on aquatic insects and minnow species like dace that are also adapted to life in a cool environment. Warm-water species like largemouth bass and bream prefer much warmer climates and thus have a wider suite of habitats available to them in the southeastern United States. They can make their home in small farm ponds, medium-sized streams, 50,000-acre reservoirs, or large tidal rivers. Largemouth bass prey on numerous species of shad, bream, minnow and other young predatory fish species. They can tolerate water over 90°F and flourish in the warm waters of the Piedmont and Coastal Plain of the Old Dominion.

These differences in temperature preference allow fisheries managers some interesting options for providing fishing diversity to anglers. For example, some deep reservoirs are suited to a two-story fishery regime. In this setting, warm-water species like largemouth or smallmouth bass can utilize the upper, warmer zones of the reservoir while trout inhabit the deeper, cooler waters. Biologists can also provide an alternative fishery during the winter by stocking trout in the fall and winter months in streams where the waters would not be cold enough during the summer. These fish are then harvested by anglers in the late spring, before the water temperatures rise again to lethal levels for trout.



Rainbow, brook and brown trout are considered cold-water species and are not able to survive water temperatures above 70° F. This is why many of the trout streams that are stocked by the Virginia Department of Game and Fisheries, are done so only during the colder months of the year.



Having a smooth, long and slender body helps fish like the American eel to live in places where predators cannot reach them.

Above: With a flat head and a mouth full of teeth to hold onto its prey, the chain pickerel is a master at lying-in-wait and making surprise attacks. Below: Smallmouth bass, however, like to stay on the go in search of their next meal.

Body Form Drives Lifestyle

Fish around the world exhibit a dizzying array of body shapes and types which allow them to live and feed in a myriad of different habitats. Does form follow function, or function follow form? Predatory fish might illustrate the adaptations best. Rover-predators are the most streamlined body forms out there and are probably the kind of fish that first come to mind as "typical." Rover-predators have pointed heads and a narrow posterior half with a forked tail. These fish are almost constantly on the move in swimming-mode and tend to be associated with open water, such as striped bass. Trout and other stream species adapted to swift currents, as well as black bass species like largemouth and smallmouth, are also classified as rover-predators.

For fish whose strategy is a lie-in-wait lifestyle, their body form tends to be very long with a flattened head. The tail fin is large and the dorsal and anal fins are well back on the body to provide a sudden burst of speed and increase thrust when the fish ambushes fast-moving prey. Good examples of this type of fish are the pikes: muskellunge, northern pike and pickerel. Both the rover-predator and the lie-in-wait predators fill a piscivore (fish-eating) niche, and they often have a large, toothy mouth which allows them to seek large prey items. A case-in-point is the largemouth bass named specifically for its enormous mouth. It is an extremely aggressive predator of other fish and will take a good lure, making it a highly prized sportfish.

Some fish species are adapted for life either at the top or bottom of the water column. Surface-oriented fish are usually small, have an upturned mouth, and often have a flattened head to allow for picking off prey at the surface of the water, without exposing their own head to air. Common species of this type include mosquitofish and killifish. At the other end of the spectrum are bottom dwelling fish species. Some of these

have flattened bodies, such as skates and rays, which have oversized pectoral (side) fins that they flap to glide through the water. Other bottom fish have a rover-predator body shape but a more flattened head; these are appropriately called bottom-rovers and include catfish, carp and suckers. These bottom dwellers usually have additional specializations to cope with life in murky or dark water. Because catfish have weak eyesight, they must compensate with a much keener sense of taste, made possible by chemical-detecting cells on their whisker-like barbels. Catfish feed near the bottom by probing with these barbels in search of invertebrates and organic matter.

"Deep-bodied" fish, on the other hand, have a body form that's compressed on the sides. This shape allows them to be very maneuverable swimmers, as the body acts like a rudder in the water and allows for efficient predator-avoidance. Most panfish are considered deep-bodied and include the sunfish species and crappie. They are precision feeders with small, flexible mouths that can easily pick off small prey such as invertebrates near the bottom or zooplankton in the water column.

The final body form—extremely long, thin and serpentine—is perhaps the most intriguing. These are the eel-like fish which have very smooth, slimy skin, and the group is made up of eels and lamprey. Eel-like fish are well suited for living in crevices and holes and for burrowing in soft mud or even leaf packs, where they can hide in safety or search for other fish.

Fisheries biologists "exploit" the body form and the predatory nature of certain species to best know how and when to sample for them. For example, since striped bass are rover-predators that spend much of their life actively swimming in open water in search of prey, biologists use nets to tangle and trap the fish as they swim through the water. Largemouth bass, in contrast, are sampled near shore where they are actively feeding on bream or shad during the preys' spawning activity.

A Fish in the Nest

Do fish make good mothers? The short answer is—some do, and it's often not the female that provides the care. One of the most fascinating and complicated aspects of the life history of fish are the variety of reproductive processes they exhibit. Some species like striped bass produce hundreds of thousands of eggs and scatter them to the water, relying on sheer numbers of eggs to perpetuate the species. Others lay fewer, larger eggs in protected nests and rely on the energy spent by the parent, usually the male, to guard the nest and thereby insure survival of future generations.

Above: With flat, rudder-shaped bodies crappie and other panfish are very maneuverable swimmers, which allows them to feed easily on prey. Below: Catfish spend most of their time swimming near the bottom. They have poor eyesight and rely on the barbels or whiskers found on the front of their head to locate food.

Virginia Naturally

Centrarchids, which is a family that includes bass and sunfish, spend a lot of energy building and guarding nests for their offspring. Sunfish species often nest in large colonies in shallow water, and their nests are easily visible near shore during the spring months. A male fish, let's say a bluegill, excavates a shallow, circular nest by using the tail to sweep away silt and small debris. Some will also remove particles by pushing or grasping the item with the mouth. After the courtship and egg laying is completed, the male will vigorously defend the nest from predators, at least until the eggs hatch. Largemouth and smallmouth bass will even defend their small school of fry for a period of time.

Trout are another nest building family. Their spawning sites are usually placed near riffles in a stream. Unlike in the centrarchid family, it is the females of the trout family that construct the nest, termed a redd. A female trout lies on her side and disturbs the substrate of the stream bottom with her powerful tail. Small gravel and rocks quickly settle back out in the current, but the finer sediments float away. She continues this action until an elliptical redd with a raised downstream mound is formed. Eggs are then deposited over the redd, and the female again disturbs the substrate to cover the eggs with another layer of gravel. The loose pile of gravel allows fresh water and oxygen to pass through while simultaneously protecting the eggs from predation. These are two of the more common nest builders in freshwater systems, but there are numerous other reproductive strategies that fish species employ to guarantee success of their progeny.

Learning More...

- *Fish Watching: an Outdoor Guide to Freshwater Fishes*, by C. Lavett Smith; c. 1994, Comstock Pub. Associates, Ithaca NY, 216 pp. The drawings and photos in this book illustrate numerous fish habitats and the kinds of fish found there; good natural history accounts of food habits, reproductive behaviors and other adaptations of various species.
- *Northeast Fisheries Science Center*—http://www.nefsc.noaa.gov/faq/—a branch of NOAA's National Marine Fisheries Service that studies fish, marine mammals, sea turtles and their environment. The Web site has a thorough Frequently Asked Questions page; and history buffs will enjoy the section of historical articles on fish- and fishing-related topics, dating back to the late 1800s. For a *Kids Corner*, go to http://www.nmfs.noaa.gov/kids.htm
- *U. S. Fish and Wildlife Service*—www.fws.gov
  In the left sidebar click on "fisheries" or "fishing" to get to more fishing links, which include such treats as a 28 page *Fishing ABC's Coloring Book*. Or, click on "Kids/Educators" for access to the *Salmon Challenge* game and other information.
- *Fish I.D. Guide and Angling Education Program*—materials and fishing clinics available through the Virginia Department of Game and Inland Fisheries, at www.dgif.virginia.gov. Click on "Fishing" and then on "Virginia Fishes" or "Fishing Education."
- *Water Wizard Van*—This traveling, water resource education vehicle is available to teachers and other educators for lessons and events. The van comes fully equipped with materials to teach about the hydrologic cycle, watersheds, water quality, aquatic insects and more. Housed and operated by Virginia's 4-H Centers on a rotating schedule, the van can be reserved through Virginia Cooperative Extension at www.ext.vt.edu/resources/4h/wizard/.

Carol A. Heiser is a Wildlife Habitat Education Coordinator with the Virginia Department of Game and Inland Fisheries.
Dan Michaelson is a Fisheries Biologist with the Department, who works out of the Farmville office.

Fisheries biologists regularly sample fish from rivers, lakes and streams. Each fish is weighed and measured. In some cases a scale sample is taken to help age a fish. The information is recorded and the data is used to help manage healthy fish populations and the quality of the water they live in.

A Mother's Devotion

by Marlene A. Condon

Illustrations by Spike Knuth

©Marlene A. Condon

On July 2, 2004 at approximately 5:40 p.m., I heard a distressed crying from my front yard. I looked out to see a young raccoon (known as a kit) wandering around in circles as if it did not know what to do. It was obviously quite frightened.

Within minutes its mother descended the radio tower a few feet away and found her baby under the mountain laurel shrubs beside the tall structure.

The female raccoon grabbed the kit in her mouth and laboriously made her way back up the tower, working hard against the force of gravity to return her baby to the nest box it had apparently fallen from. After depositing the youngster into the opening of the box, a fatigued "Mom" gave one last look around before joining the kits inside until dusk.

The radio tower holds a large box I had paid to have built several years ago with the hope that I might attract chimney swifts. Although the opening of the box is about 30 feet above the ground, I realized after its installation that it should have been attached at the very top of the tower to attract swifts.

Lover of wildlife that I am though, I do not consider the experiment to have been a failure. After all, it gave me the opportunity to witness this truly touching illustration of a mother's devotion.

Marlene Condon is a nature writer and photographer who specializes in landscaping for wildlife.

Journal

2005 Outdoor Calendar of Events

February 26: *Trout Fishing Workshop,* Fort A.P. Hill, Bowling Green. Contact Chris Dunnavant at 804-367-0656 or e-mail Chris Dunnavant@dgif.virginia.gov.

March 19: *Youth Turkey Hunt,* Fulfillment Farms, Scottsville. For more information contact Jimmy Mootz at 804-367-0656 or e-mail Jimmy.Mootz@dgif.virginia.gov.

April 22–24: *Becoming an Outdoors Woman® (BOW),* Holiday Lake 4-H Camp, Appomattox. For more information contact Jimmy Mootz at 804-367-0656 or e-mail Jimmy.Mootz@dgif.virginia.gov.

July 8–10: *Virginia Outdoors Weekend,* Twin Lakes State Park, Green Bay. For more information contact Jimmy Mootz at 804-367-0656 or e-mail Jimmy.Mootz@dgif.virginia.gov.

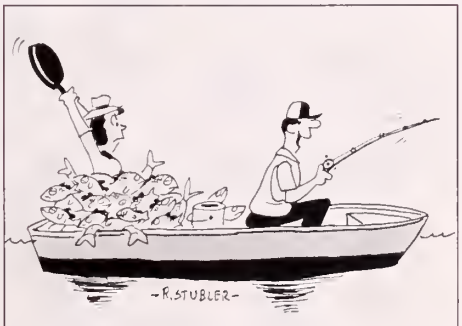
August 26–28: *Mother-Daughter Outdoors,* Holiday Lake 4-H Educational Center, Appomattox. For more information contact Jimmy Mootz at 804-367-0656 or e-mail Jimmy.Mootz@dgif.virginia.gov. □

ARK's 3rd Annual Wild Baby Shower to Help Local Wildlife!

The stork delivers a lot of wild animal babies each year, but who takes care of the orphaned and injured ones until they can survive in the wild? The wildlife rehabilitators of the Area Rehabbers Klub (ARK) do, with your help! While this event has been hosted in the past by BirdWatchers in Commonwealth Center, we will be moving to a new location due to the growing size. BirdWatchers will still be supporting us and if you mention this article you will receive a free sample bag of the Backyard Best birdseed.

Our new location for our third annual "Wild Baby Shower" to benefit orphaned and injured wildlife babies from the Richmond area and surrounding counties will be held on February 26th from Noon to 5 p.m. at the Rockwood Park Nature Center, and we want you to be there to join the party. This is no boring old "human" baby shower, even though there will be cake, games, prizes and all the usual shower things. ARK's live education animals will be there, from opossums to owls, since the wild babies can't come out and party (they're napping and being kept wild!) Your shower gifts will immediately be used for the care of local wildlife.

Our wish list consists of things you already have lying around the house or if you wish to purchase an item, we are registered with the baby clubs at Target and Wal-Mart. For more information and a wish list, call the ARK Wildlife Hotline at 598-8380 or see ARK's Web site at: www.welcome.to/arkva. □



"Here's another one, Alice, get the old frying pan ready."

©Ken Perrotte

Rappahannock Carvers Guild Show

by Ken Perrotte

Three men lean forward in folding chairs, studiously gazing into a tank of shallow water at hand-carved, hand-painted waterfowl decoys bobbing amid the ripples.

They carefully watch to see how the birds sit on the water. Do they rock front-to-back (good)? Or, side-to-side (bad)? Is the pose natural? Are the eyes properly set and positioned? Is the paint job sufficiently detailed for the category being judged?

One spectator in the crowd of 100 or so observers remarks, "The first one to get up and fly away wins."

Indeed, some of these birds look realistic enough to do just that.

Welcome to the drama of the Rappahannock Carvers and Collectors Guild's annual show at Rappahannock Community College in Warsaw, Va., a February tradition in the Northern Neck.

Decoy carving has been an American tradition for centuries. Today, decoys can fetch thousands of dollars at artisan fairs and auctions.

The Rappahannock Guild's show typically attracts nearly 100

carvers from Virginia, Maryland and North Carolina, who compete across several categories: Gunning decoys are old-fashioned type birds, with bodies of cork or wood, and simple paint jobs. Service decoys are also working decoys, but can have fancier paint jobs and more intricate carving. Another category includes working decoys made of canvas wrapped around wood or wire frames. A "stick-up" category often features carvings of shorebirds, while the decorative category finds everything from birds to fish carved and painted with profuse detail.

The judges are often guild members and carvers themselves, judging categories in which they don't personally compete.

Finally, in the Service Category's Marsh Duck competition, judge Heck Rice of Hanover, a maker of fine canvas decoys, points to one duck and nods. Show organizer Wade Johnson lifts the widgeon from the tank and holds the dripping bird aloft, declaring "First place!" thus adding to Lanexa, Va., carver James Richmond's substantial collection of blue ribbons.

Call 804/537-5033 for details about the Rappahannock Guild and up coming annual show. □

Lee Walker

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Answers to the December 2004 "Byrd Nest" Crossword Puzzle

R	O	B	I	N	■	W	H	A	L	E	■	A	F	T	■	L	U	N	A
■	■	E	■	A	C	■	O	■	■	L	D	■	L	O	W	■	■	U	S
M	A	R	T	G	O	L	D	■	■	K	A	T	Y	D	T	D	■	T	S
O	■	G	■	■	R	■	■	L	■	■	S	■	■	■	N	■	■	H	E
N	■	A	■	Y	E	L	L	O	W	T	H	R	O	A	T	■	B	A	T
A	R	M	S	■	O	■	■	B	■	H	E	A	R	■	E	■	O	T	■
R	■	O	■	■	R	■	A	L	D	E	R	■	B	U	R	D	O	C	K
C	A	T	E	T	S	H	■	O	■	M	■	B	■	■	G	O	T	H	■
H	■	■	T	■	T	■	■	L	■	■	■	A	■	O	R	T	■	■	D
■	T	N	N	■	S	H	E	L	L	E	T	S	H	■	E	■	W	A	R
■	D	A	C	F	■	T	■	Y	■	■	■	S	■	■	E	■	H	■	A
K	■	■	H	■	A	S	S	■	E	O	X	■	B	U	N	T	T	N	G
T	N	K	■	K	■	■	U	■	■	R	■	■	O	■	■	A	R	E	S
N	■	T	T	T	■	A	N	T	■	C	R	A	B	A	R	R	L	E	■
G	A	L	E	N	A	■	E	■	■	H	■	■	B	■	Y	■	T	■	■
S	■	L	■	G	U	L	L	■	W	A	L	L	E	Y	E	■	G	A	S
N	■	D	■	E	■	■	O	■	O	R	E	■	R	■	■	F	T	S	H
A	R	E	■	T	■	S	W	O	R	D	E	T	S	H	■	■	G	R	A
K	■	E	■	S	■	■	E	■	M	S	T	■	■	■	■	A	■	E	R
E	A	R	T	H	W	O	R	M	S	■	■	C	H	T	P	M	U	N	K

RECIPES

Tender Goose Breasts Guaranteed

Many hunters breast out their geese. This provides a boneless, skinless breast ready for cooking. The age and tenderness of goose breasts can vary. Therefore using the pressure cooker is your assurance that breasts from all geese will be tender.

Menu
Hot Cheese Snacks
Sweet 'N Sour Goose Breasts
Asparagus With Lemon Butter
Crispy Coleslaw
Frozen Strawberry Yogurt Pie

Hot Cheese Snacks

¼ pound (1 stick) butter
½ pound (8 ounces) Cheddar cheese, grated
½ package dry onion soup mix
1 cup flour

Preheat oven to 375° F. Have butter and cheese room temperature. Add soup mix and flour to the butter and cheese and blend well. Shape mixture into one inch wide rolls. Wrap these in wax paper and chill until firm. Slice rolls ¼-inch thick and bake on an ungreased baking sheet for 10 to 12 minutes or until lightly browned.

Sweet 'N Sour Goose Breasts

(For pressure cooker)

2 goose breasts (about 3/4 pound each) boned and skinned
1 tablespoon vegetable oil
1 can (20 ounces) pineapple chunks, drained and juice reserved
1 cup reserved pineapple juice (add water if necessary)
½ cup sliced celery
¼ cup brown sugar
½ cup vinegar
2 tablespoons soy sauce
1 tablespoon catsup
½ teaspoon Worcestershire sauce
¼ teaspoon ground ginger
2 tablespoons cornstarch
2 tablespoons cold water

Heat cooker, add oil and brown goose breasts. Combine pineapple juice and remaining ingredients except pineapple chunks, cornstarch and water. Pour mixture over breasts. Close cover securely and cook 20 minutes. Cool cooker at once. Remove breasts to a warm platter. Mix cornstarch with cold water and stir into hot liquid. Cook and stir until mixture boils and thickens. Add pineapple chunks and heat. Slice goose breasts and return to hot sauce. Serve over hot cooked rice. Serves 4.

Asparagus With Lemon Butter

2 pounds fresh asparagus
¼ cup butter or margarine
Salt and pepper to taste
1 tablespoon grated lemon rind
¼ cup fresh lemon juice

Snap off tough ends of asparagus and remove scales with a vegetable peeler, if desired. Melt butter in a skillet and add asparagus. Sauté 3 minutes or until crisp-tender. Add salt and pepper and toss with lemon rind and juice. Makes 4 to 6 servings.

Crispy Coleslaw

1 bag (16 ounces) shredded cabbage
½ cup thinly sliced red bell pepper
¼ cup sunflower seeds, toasted
6 tablespoons vegetable oil
6 tablespoons white wine vinegar
¼ cup sugar
3 teaspoons low sodium chicken flavored bouillon granules
Pepper to taste
1 package (3 ounces) ramen noodles

In large bowl, stir together cabbage, bell pepper and sunflower seeds. In small bowl, whisk together oil, vinegar, sugar, bouillon and pepper until sugar is dissolved. Before serving, break up ramen noodles and toss with cabbage mixture. Add dressing and toss to coat. Makes 6 to 8 servings.

Frozen Strawberry Yogurt Pie

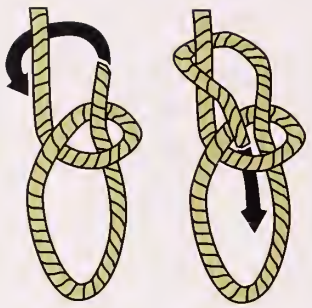
2 containers (8 ounces each) strawberry lowfat yogurt
1 tub (8 ounces) whipped topping, thawed
2 cups strawberries, diced or sliced
1 (6 ounces) prepared graham pie crust

Stir yogurt gently into whipped topping until well blended. Stir in strawberries and spoon into crust. Freeze 4 hours or overnight until firm. Let stand in refrigerator 15 minutes or until it cuts easily. Garnish with whole strawberries, if desired. Serves 8. □

Virginia's Finest

On The Water

by Jim Crosby



Bowline Knot

Boaters Need A Few Lines

There are a few lines that should be basic equipment for every recreational boater and I am not talking about spoken lines but the ropes put to work on your boat. Winter, when the boat is made secure from the ravages of freezing temperatures, is a good time to think about the ropes and lines that we take for granted during the boating season—at least until they fail. It's a great time to take an inventory of what's aboard and the condition of each to determine if they will serve through the upcoming season.

First, and most important for small craft, is the bow line or painter. This line should never be longer than the vessel so it can't become entangled in the prop should it fall overboard. The painter is used to secure the vessel when docking or maintain control while launching. In a one-person launch, it's a good idea to tie the painter to the trailer so the boat will not float away and require an impromptu swim to retrieve it.

The next to consider is your dock lines. You should have a minimum of two and four is better, however six or eight can be required under certain circumstances. They should be approximately the length of your vessel and have an eye-splice in one end. One of these can be used as your painter. A typical, short-term tie up should involve the use of a bow and stern line approaching the dock at approximately a 45-degree angle. A heavy weather tie-up in a slip could involve the use of as many as eight dock lines—a pair of bowlines, another pair of stern lines, and four spring lines. This will keep the vessel centered within the slip to prevent rubbing and chafing as well as, allow for the rise and fall of tides and waves.

An excellent reference on dock lines and their use can be found in any recent edition of *Chapman Piloting Seamanship & Small Boat Handling*. Any recreational boater who is not familiar with Chapman is missing a great opportunity to hone his, or her, boating skills and enjoy some great reading when boating is out of season.

Most small boats have cleats installed, fore and aft. Securing a line to a cleat properly is just good seamanship, yet many fail to do it correctly leading to trouble later. A line should approach the cleat at an angle to the horns, take a complete turn around the base passing under both horns, and be secured by making a figure eight on the horns. Two figure eights are sufficient; more add no security and only lengthen the undo time later. You can finish off the figure eights by turning the last hitch over and tightening it down to bind against itself. This is called a weather hitch and makes the tie-up secure. That first turn all the way around the base puts the stress on the fasteners and not the ears of the cleat.

Another basic for the recreational boater should be a few knots that can be tied automatically from memory with no more thought then is needed to tie your shoes. This is another skill that can be developed and practiced when you can't get out on the water. A basic list of knots for boaters should include the following:

A bowline is known as the king of knots. Once learned, it is easy to tie, never slips or jams and can always be untied easily. The bowline puts a fixed loop in the end of a line and its uses are limited only by one's imagination.

The clove hitch is very useful because it can be made up in your hands while approaching a dock, dropped over the piling upon arrival and pulled taut to secure. For long-term security, Chapman recommends that a half hitch be added to the standing part.

The sheet bend is an excellent way to tie two lines together especially when they are of different size and texture. It, like the bowline, is easily removed after being subjected to great strain.

The figure-eight knot is a quick and simple way to make a stopper knot. It will keep a line from running through a block or grommet and is quick to tie and untie for speed and efficiency.

Virginia Department of Game and Inland Fisheries' certified boating instructors cover these and many other boating skills in their classes. You are invited to contact the Department for additional information. Call (804) 367-1125 or go online at www.dgif.virginia.gov. □

Author's Note: *Feedback, questions or even suggestions are always welcome. Contact me at: jimecrosby@aol.com.*

Naturally Wild

story and illustration
by Spike Knuth

Greater Snow Goose
Chen caerulescens

One of the more spectacular sights in coastal Virginia are the wintering flocks of greater snow geese. These big white geese have traditionally followed a narrow migrational corridor down the Atlantic Coast to winter in eastern coastal marshes and fields. Virginia's Eastern Shore is a favored area for them, especially the Chincoteague National Wildlife Refuge.

Back in mid-October, nearly the whole Atlantic population of greater snows had gathered on the lower St. Lawrence River at Cap Tormente in the province of Quebec, until November when they moved south en-masse to the marshes of New Jersey, Delaware, Maryland, Virginia and North Carolina.

The greater snow goose is basically all white with black primary wing feathers. Some may confuse them with the tundra swan, but the tundra swan does not have black on its wings, and is much larger with an obviously longer neck. Often the heads of the snows are brushed with a light rust color. They have pink feet and bills; the bills having a black "grinning patch." "Young of the year" snows are sooty or dusky gray with darker feet and bill. The blue goose, a dark-bodied goose with a white head and neck is a color phase of the snow goose that makes up less than five percent of the greater snow goose populations.

On the water, snow geese sit high and buoyant in the water. Their call is a dog-like barking described as "auk-auk" repeated often. Snows fly in overlapping rounded vees and waving lines across the sky, ever changing. They root and grub in the mud to feed on roots and tender stems of mainly cord grass and sedges. Often their heads are plastered with mud half way down their necks. They feed so heavily that certain areas turn into big mud holes. So efficient are they at feeding that these areas become devoid of vegetation and sometimes never recover. Because of this heavy rooting, much of its habitat on both its breeding and wintering grounds is being decimated, which affects other species as well.

The snows will begin leaving Virginia in late-February and early-March. Once again they gather on the St. Lawrence River near the city of Quebec, duplicating their fall migrational habit of staging there, before heading to their Arctic breeding grounds on the most northern islands of the Arctic and northwestern Greenland. The northern natives call the snows and blues "wavies," which is a corruption of the word "wa-wa," which means "wild goose." in their language.

Snow geese mate for life or until a mate is killed or dies of other causes. Once on the nesting grounds in the marshy, grassy tundra, the female forms a hollow on the ground amid scrub willows or grasses, lining it with more grasses, moss, feathers and down, often dragging mud and grasses up around the sides forming a mound. Anywhere from three to seven white eggs are laid around the first of July.

Timing is critical because there are only 80 to 100 days to raise young to fledging. If snow and freezing weather extends too far into June, females may not nest. Also, once eggs are laid and a cold snap causes a nesting failure, she can't lay again. Early cold weather will sometimes freeze the young before they fledge.

If nesting is successful, the young hatch about mid-July. They are led immediately to large Arctic ponds to feed on insects, berries, seeds and vegetation. They grow rapidly in the long summer Arctic days, and then move to more open seas to feed on mollusks and sea cabbage until early-September when they are almost full grown. Come late-September, the cycle begins anew as they once again gather on the St. Lawrence River before moving south to the middle Atlantic marshes. □

Qualifications:

- Must be at least 21 years of age on the date of hire.
- Must have a high school diploma or GED (College and/or related experience preferred).
- Must be a United States citizen.
- Must be of good character and reputation. Convicted felons and persons convicted of a misdemeanor crime of domestic violence are ineligible and will not be considered.
- Must possess or be eligible for a Virginia driver's license.
- Must have a good driving record.
- Must have at least 20/100 binocular vision correctable to 20/20.
- Must be willing to work days, nights, weekends and holidays.
- Must be willing to travel overnight as assigned.
- Must be able to swim 50 meters then stay afloat for 15 minutes.
- Must be willing to relocate to any county or city in the Commonwealth of Virginia.
- Must be willing to travel to complete testing and screening.

For more information visit our Web site at:

www.dgif.virginia.gov

Is a Career In Wildlife Law Enforcement For You?

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